

Remarks/Arguments:

In response to the Advisory Action mailed August 1, 2003 in the parent application, applicants respectfully request reconsideration. In the Advisory Action, claims 7-12 were indicated as being allowable. However, the rejection regarding claims 1, 2 and 4-6 was maintained. Accordingly, the rejected claims were canceled in the parent application and are being pursued in this Continuation application. Accordingly, after entrance of this Preliminary Amendment, claims 1, 2 and 4-6 will be pending in this application.

Claim Rejections Under 35 U.S.C. §103

The rejection of claims 1, 2 and 4-6 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,991,862 to Ruane (hereinafter “Ruane”) was maintained by the examiner. This rejection is respectfully traversed.

Independent claim 1 recites, in addition to other features, that a portion of the rows store extents pointing to data blocks, each extent having a field to indicate whether the extent is an indirect extent, a hole extent or a direct extent. In the response to the Final Office Action, applicants argued that Ruane could not teach the claimed invention because his system includes a single pointer bit for indicating the type of address block to which the associated pointer points. Specifically, if the pointer bit is set, the pointer points to a data block in the data file area. If the pointer data bit is not set, the pointer points to an indirect address block in the next lower level of address blocks (col. 4, lines 62-65).

Accordingly, Ruane teaches a system in which a pointer entry includes a pointer and a pointer data bit. The pointer data bit only indicates whether the pointer points directly to an address in the data file area (pointer set to 1) or points to an indirect address block in a lower level (pointer set to 0). There is no teaching or suggestion in Ruane for the pointer entry to be able to indicate that the pointer entry is a hole extent which points to an empty data block. As set forth above, the pointer data bit of Ruane only indicates where the pointer associated with the pointer data bit is pointing – either directly to the data file area or to an indirect address block. The pointer data bit does not, and cannot,

indicate whether the pointed-to data block has data allocated to it, such as is the case with the hole extent recited in independent claim 1.

In Part 5 of the Advisory Action, the examiner stated, in response to applicants' argument that Ruane does not teach the invention recited in applicants' independent claim 1, that "... applicants argued about a hole extent which points to an empty data block and a single bit. Both empty data block and a single bit are not in claims 1 and 5." The examiner seems to believe that applicant is claiming a single bit in addition to an empty data block. Clearly this is not the case. Applicants are not claiming a single bit, but rather are claiming that a portion of the rows store extents pointing to data blocks, each extent having a field to indicate whether the extent is an indirect extent, a hole extent or a direct extent.

Ruane's disclosure does not teach or suggest the ability or desire to have extents including a field indicating whether the extent points to an indirect extent, a hole extent or a direct extent. As set forth above, the pointer data bit of Ruane only indicates where the pointer associated with the pointer data bit is pointing – either directly to the data file area or to an indirect address block. The pointer data bit does not, and cannot, indicate whether the pointed-to data block has data allocated to it, such as is the case with the hole extent recited in independent claim 1. Accordingly, since the prior art does not teach or suggest the invention recited in independent claim 1, independent claim 1 is allowable over the art of record and the rejection under 35 U.S.C. §103(a) should be withdrawn.

Claims 2 and 4 depend from independent claim 1 and are allowable for at least the same reasons as independent claim 1.

Regarding claim 4, which recites that each extent further comprises a length field wherein the length field of each indirect extent indicates the number of data blocks pointed to indirectly by the indirect extent, the examiner states that Ruane teaches extents that are a list of physical addresses for searching the address and the size, physical address and length but refers to the Background section of the Specification, which recites the inventor's view that the described extents-based system is not desirable. In Column 2, Lines 30-35, the inventor recites that one of the problems with the extent-based system is that it requires a "very long list of 'physical address, length' pairs to specify a file."

Clearly then, as explained in applicants' previous response, Ruane does not teach or suggest having a length field and actually teaches away from one. As argued in the previous response, Ruane never addresses the issue of retrieving more than one data block with a single pointer. Every reference to data that is retrieved by the pointer is to "a data block". For example, "[o]ffset information in offset 20 is combined with these pointers in various ways to identify a data block in area 10 for retrieval." (col. 5, lines 9-11). "[T]he pointer in the inode points directly to a start address in data storage area 10..." (col. 5, lines 24-25). "[T]he pointer will point directly to a starting point in storage area 10." (col. 5, lines 31-32). "The actual location of the data block to be retrieved..." (col. 5, line 36). Column 5, lines 30-44 provide an example of how a data block at address 11,350 in data storage area 10 would be retrieved.

Accordingly, only single data blocks may be retrieved by each pointer entry of the addressing system disclosed by Ruane. There is no teaching or suggestion of a pointer entry including a length field indicating a number of data blocks pointed to by the pointer entry. Therefore, claim 4 is allowable over Ruane, and the rejection of claim 4 under 35 U.S.C. §103(a) should be withdrawn.

Regarding independent claim 5, the examiner states that Ruane discloses assigning an inode to a data file to be stored and writing a plurality of extents in the inode, each extent pointing to a string of one or more data blocks for storing a segment of the data file and having a field for indicating that the extent is one of an indirect extent, a hole extent and a direct extent. This rejection is respectfully traversed, as Ruane does not teach or suggest a field for indicating that the extent is one of an indirect extent, a hole extent and a direct extent, or that each extent points to a string of one or more data blocks. The portions of the Specification referred to by the examiner are the Background which, as described above, teaches against applicants' invention as claimed, and portions of the Summary (Col. 3, Lines 24-26 and 50-55) that do not teach or suggest the elements of applicants' claim being referred to by the examiner.

As set forth above in the discussion of the rejection of independent claim 1, Ruane does not teach or suggest a pointer entry having a field indicating that the pointer entry is a hole extent which points to an empty data block. The pointer data bit of Ruane only indicates where the pointer associated with the pointer data bit is pointing – either

directly to the data file area or to an indirect address block. The pointer data bit does not, and cannot, indicate whether the pointed-to data block has data allocated to it, such as is the case with the hole extent recited in independent claim 5. Furthermore, as discussed above in the discussion of the rejection of claim 4, Ruane does not teach that each pointer points to a string of one or more data blocks. As discussed above, Ruane teaches a system in which each pointer entry points to a single data block only. Ruane's pointer entry does not include any means to enable a single pointer to point to more than one data block. Basically, the only information included in a pointer entry in Ruane's system is an address at which a single data block is located.

Accordingly, since Ruane neither teaches or suggests pointers that point to a string of one or more data blocks nor pointers that include a field for indicating that the extent is one of an indirect extent, a hole extent and a direct extent, applicant asserts that independent claim 5 is allowable over Ruane and that the rejection of independent claim 5 under 35 U.S.C. §103(a) should be withdrawn.

Claim 6 depends from independent claim 5 and is allowable for at least the same reasons as independent claim 5.

Regarding claims 13, 14, and 16, applicants assert that these claims are allowable over the art of record as none of the references teach the combination of elements recited in independent claim 13, including that each extent includes a field to indicate whether the extent is an indirect extent, a hole extent or a direct extent.

Based on the foregoing remarks, applicants assert that pending claims 1, 2 and 4-6 are allowable over the cited art of record and respectfully requests that a timely Notice of Allowance be issued in this application. Applicants respectfully request an interview with the examiner to discuss the matters addressed above if the examiner does not believe that the claims are allowable as presented.

Respectfully submitted,

8/19/03

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Date

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